

An Event Study on Wealth Effects of Mergers and Acquisitions between Japanese Firms

Satoru Hiruta

1. INTRODUCTION

Whether mergers and acquisitions (M&A) create economic values is a central question in corporate finance and strategy. In answering this question, finance theory usually considers shareholder wealth as the primary objective because shareholders are the residual owners of the firm and assumes that a focus on shareholder value yields an efficient evaluation criterion. A large number of event studies have analyzed short-term shareholder wealth effects since the 1970s. The approach hinges on the assumption that an M&A announcement brings new information to the market, such that investors' expectations about the firm's prospects are updated and reflected in the share prices. An abnormal return at announcement equals the difference between the realized returns and an expected (benchmark) return, which would be generated in case the takeover bid would not have taken place.

Some researchers examine announcement period returns for the acquirer and target combined as well as announcement period returns for acquirers and targets. Analyzing announcement period returns on a combined basis is academically important because it can capture the market's expectation about the future prospect of the merging firms. As shown in Table 1, prior

Table 1: Summary of Studies on Announcement Period Abnormal Returns for the Acquirer and Target combined

	Sample		Acquirer CAR		Target CAR		Combined CAR	
	Year	N						
Kaplan et al. (1992)	1971-1982	209	-	S	+	S	+	S
Mulherin et al. (2000)	1990-1998	376	-	IS	+	S	+	S
Andrade et al. (2000)	1973-1998	3,688	-	IS	+	S	+	S
Graham et al. (2002)	1980-1995	356	-	S	+	S	+	S
Bhagat et al. (2005)	1962-2001	1,018	+	IS	+	S	+	S

S: Statistically significant; IS: Statistically insignificant

studies report statistically significant, positive abnormal announcement returns for the acquirer and target combined (Kaplan and Weisbach, 1992; Mulherin and Boone, 2000; Andrade, Mitchell and Stafford, 2001; Graham, Lemmon and Wolf, 2002; Bhagat, Dong, Hirshleifer and Noah, 2005). Turning to M&A between Japanese firms, most prior studies analyze announcement period returns only for acquirers. A notable exception is a study by Inoue and Kato (2003), which examines 144 transactions between 1990 and 2002 and reports statistically significant, positive announcement period abnormal returns for acquirers and targets. However, Inoue and Kato (2003)'s analysis does not include announcement period returns for the acquirer and target combined, and thus, we do not know whether M&A between Japanese firms create the combined value of merging firms.

This paper aims to fill this research gap. I examine announcement period returns for 77 transactions between public Japanese firms completed between 2000 and 2005.

2. SAMPLE AND DATA

Sample

This study' sample consists of 77 mergers and acquisitions between public Japanese firms in the 2000-2005 period. The sample is constructed to be

free of post-M&A contaminating events such as M&A of subsidiary firms by their parent firms and minority equity participation.

Announcement period abnormal returns

Following Brown and Warner (1985), I use the modified market model to estimate abnormal stock returns for acquirers and targets. I do not use the market model mainly because transactions took place less than eighty days out of one hundred trading days prior announcement for about one fourth of the sample firms. Closing share prices are not available for these firms, and using the market model for this kind of samples may bias results of analyses. I calculate daily abnormal returns (AR) for a firm by deducting the value-weighted index returns from the firm's return:

$$AR_{it} = R_{it} - R_{mt}$$

where R_{it} is firm i 's daily stock return on date t and R_{mt} is the return for the value-weighted TOPIX (a index of Tokyo Stock Exchange) return on date t . I calculate abnormal returns for two event windows around the announcement date: three-day event windows (from one day prior the announcement date to one day after the announcement date) and five-day event windows (from two days prior the announcement date to two days after the announcement date). The cumulative abnormal returns (CAR) are calculated by summing the abnormal returns over the two event windows.

I then compute the aggregate CAR for the acquirer and target. This combined CAR is the weighted average of CAR for the acquirer and target, where the weight is the market value of equity of the firms two days prior to the announcement date for the three-day event window and three days prior to the announcement date for the five-day window. I adjust the weight for the target for the percentage of its shares held by the acquirer prior to the announcement.

3. RESULTS

Table 2 displays announcement period abnormal returns for acquirers and targets as well as for the acquirer and target combined. The results indicate that both acquirers and targets, on average, earn statistically significant, positive announcement period abnormal returns. The results also provide empirical evidence that the mean announcement period abnormal returns for the acquirer and target combined is positive and statistically significant.

The mean CAR over the three-day window and five-day window for acquirers are 3.09% and 3.01%. The mean CAR over the three-day window and five-day window for targets are 1.71% and 2.69%. These results are similar to those of Inoue and Kato (2003)'s study, which reports a 1.8% abnormal return for acquirers and a 3.7% abnormal return for targets in their sample of completed transactions, in that both studies show significant positive abnormal returns. The results of the two studies differ in two ways. First, the abnormal returns for acquirers are higher in this study's sample than in their sample. Second, the abnormal returns for targets are lower in this study's sample than in their sample.

Turning to the primary interest of this study, the mean CAR over the three-day window and five-day window for the acquirer and target combined are 1.96% and 1.94%. These figures are close to that of Andrade et al. (2001)'s study, which analyzes M&A between U.S. firms and reports a 1.8% abnormal

Table 2: Announcement Period Abnormal Returns for Sample Firms

	CAR3 (t-1, t+1)		CAR5 (t-2, t+2)	
Acquirer	3.09%	***	3.01%	***
Target	1.71%	**	2.69%	**
Combined	1.96%	**	1.94%	**
N	77		77	

*** significant at 1%, ** significant at 5%, * significant at 10%

return over three-day window for the acquirer and target combined. The median equity market value for the acquirer and target combined was about 61.4 billion yen in my sample, such that a 1.96% announcement period abnormal return corresponds to a 1.20 billion yen increase in the market value of merging firms.

CONCLUSION

This paper has analyzed announcement returns for recent M&A between public Japanese firms. I find in my sample that both the acquirers' shareholders and the targets' shareholders earn positive abnormal returns at announcement and that the total announcement wealth effects are positive and significant.

Analysis can be extended in several ways. One possible avenue is to examine the relationship between wealth effects at announcement and subsequent changes in operating performance. Operating performance studies attempt to identify the sources of gains from M&A and to determine the expected gains at announcement are ever actually realized. These studies generally focus on accounting measures such as operating cash flow margins and return on assets. If the market's expectation about the prospect of acquirers and targets eventually shows up in operating performance changes of merged firms, there will be a significant, positive relationship between the market's assessment of the changes and the actual operating performance changes. Empirical research on this issue has been limited. Notable examples are studies by Healy, Palepu and Ruback (1992) and Andrade, Mitchell and Stafford (2001), both of which find a significant positive relationship between announcement period abnormal returns for the acquirer and target combined and subsequent operating performance changes of the merged firms.

REFERENCES

- Andrade, G., Mitchell, M.L., and Stafford, E. 2001. New evidence and perspectives on mergers. *Journal Economic Perspective* 15 (2), 103-120.

- Bhagat, S., Dong, M., Hirshleifer, D., and Noah, R. 2005. Do tender offers create value? New methods and evidence. *Journal of Financial Economics* 76 (1), 3-60.
- Brown, S. and Warner, J. 1985. Using daily stock returns: The case of event studies. *Journal of Financial Economics* 14, 3-31.
- Graham, J., Lemmon, M., and Wolf, J. 2002. Does corporate diversification destroy value? *Journal of Finance* 57 (2), 695-720.
- Healy, P. M., Palepu, K. G., and Ruback, R. S. 1992. Does corporate performance improve after mergers? *Journal of Financial Economics* 31, 135-175.
- Inoue, K. and Kato, H. 2003. M&A happyoubi no kabuki-koka ni kansuru youin-bunseki (in Japanese). *Gendai Fainance* 13, 3-28 (in Japanese).
- Kaplan, S. and Weisbach, M. 1992. The success of acquisitions: evidence from divestitures. *Journal of Finance* 47 (1), 107-138.
- Mulherin, J. H. and Boone, A. L. 2000. Comparing acquisitions and divestitures. *Journal of Corporate Finance* 6, 117-139.